

Application No. 10/798,389
Amendment dated August 18, 2006

Docket No.: 4799-0112P

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1-18 and 30-33 are pending in the present application. Claims 1, 16 and 17 are independent. Claims 1, 2, 7, 10, 11 and 15-17 have been amended. Claims 30-33 have been added. Claims 18-29 have been canceled. Reconsideration of this application, as amended, is respectfully requested.

Rejections under 35 USC 102 and 103

Claims 1 and 11-17 stand rejected under 35 USC 102(b) as being anticipated by McClanahan et al. Claims 2-10 stand rejected under 35 USC 103(a) as being unpatentable over McClanahan et al. These rejections are respectfully traversed.

Claim 1 has been amended to recite a combination as follows:

1. (Currently Amended) A printed circuit board (PCB) for a modular connector comprising:
circuit elements;
a plurality of contacts mounted on said PCB for contacting conductors of a mating connector, wherein at least some of said contacts are electrically connected to said circuit elements, and wherein original crosstalk occurs between at least some conductors of said mating connector;
a first section of said PCB having a first dielectric constant (DK);
a second section of said PCB having a second DK lower than the first DK, and provided above or below the said first section; and
at least one crosstalk compensation element ~~provided in the~~ utilizing said first section to provide compensating crosstalk to offset the original crosstalk, ;
and wherein said circuit elements are at least one circuit element provided in the said second section.

Support for the amendments to claim 1 can be found on at least pages 1 and 2 of the specification, such as paragraph 004, and also in the Assignee's prior U.S. Patent 5,997,358,

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which was incorporated by reference in paragraph 003. Support for new claims 30-31 can be found in original claims 16-17. Support for new claims 32-33 can be found in original claim 17, paragraph 004, as well as in U.S. Patent 5,997,358, which was incorporated by reference in paragraph 003.

McClanahan et al. fail to show or suggest a PCB for a modular connector, including a plurality of contacts mounted on said PCB for contacting conductors of a mating connector. McClanahan et al. also fail to show or suggest any original crosstalk occurring between conductors of the mating connector. There is absolutely no hint in McClanahan et al. to attach contacts of a modular connector, e.g. a jack or plug, to the PCB.

McClanahan et al. also fail to show or suggest a "crosstalk compensation" element provided in the first section to provide "compensating crosstalk to offset the original crosstalk." While McClanahan et al. do show a capacitor in the first section, it would be pure speculation that the capacitor constituted a crosstalk compensation element, offsetting any original crosstalk. McClanahan et al. makes no such showing or suggestion. The capacitor of McClanahan et al. could just as well be part of a power supply system to ensure constant DC voltage without voltage fluctuations.

Moreover, it is respectfully asserted that one of ordinary skill in the art would not have been motivated, nor found it obvious, to have modified the structure illustrated by McClanahan et al. by incorporating a contacts of a modular connector, e.g. a jack or plug, on the PCB and using the high dielectric constant layers as part of a crosstalk compensating element to offset original crosstalk occurring in a mating connector. McClanahan et al. disclose that their invention is directed to "electromagnetic interference (EMI) shielding dielectric layers." Col. 1, lines 10-11. In col. 1, lines 35-40, McClanahan et al. state:

A consideration with hybrid multilayer circuit structures is shielding and controlling electric fields which are generated internally to the hybrid multilayer circuit structure (for example by RF microstrip or stripline conductors), as well as for externally generated electric fields.

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McClanahan et al. go on to state that previous attempts to control EMI have included adding an external structure (e.g. a metal housing) to cover an EMI offending, or EMI susceptible, element on a multilayer PCB. However, by McClanahan et al.'s invention, the external structures are no longer needed, rather the high dielectric constant layer can be the EMI shield. This is because the EMI shielding layer has a dielectric constant of about 100. See col. 3, line 20.

It would not have been obvious to one having ordinary skill in the art to have used the McClanahan et al. multilayer PCB of the RF EMI shielding art in combination with a modular connector to compensate for conductor-to-conductor crosstalk in the connector art. Applicants' invention is dealing with compensating elements, e.g. capacitors, to compensate for offending crosstalk. Such capacitors would have a much smaller dielectric constant, for example on the order of 4 or 5, as recited in claim 16. Such lower dielectric constants would not be seen as EMI shielding layers, which have a dielectric constant on the order of 100 (as described by McClanahan et al. in col. 3, line 20). Indeed, the high dielectric constant layer of Applicants' invention has a dielectric constant (4 or 5) which is actually lower than the so-called low dielectric constant layer (7 or 8) of McClanahan et al.'s PCB, again illustrating the diverse nature of the claimed PCB (useful in forming crosstalk compensating structures) and the PCB of McClanahan et al. (useful for EMI shielding).

Dependent claims 2-15 and 30-33 should be considered allowable for the reasons argued above, as well as for the additional limitations recited therein.

Dependent claim 16 has been rewritten in independent form without modification from its original limitations. Previously, the Examiner rejected claim 16 as being anticipated by McClanahan et al. Applicants respectfully disagree. McClanahan et al. show a first dielectric constant of about 7 or 8 and a second dielectric constant of about 100. This showing cannot anticipate, under the requirements of 35 USC 102(b), the claimed first dielectric constant in the range of 4.0 to 5.0 and second dielectric constant in the range of 2.5 to 3.5.

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Dependent claim 17 has been rewritten in independent form without modification from its original limitations. Previously, the Examiner rejected claim 17 as being anticipated by McClanahan et al. Applicants respectfully disagree. Claim 17 recites that the at least one "compensation element" includes a plurality of capacitors placed at "different compensation stages of the PCB." The Examiner asserts that this arrangement is "inherently" shown by McClanahan et al. There is no such inherent showing. The capacitors are not even described as crosstalk compensating capacitors, and could just as well be part of a DC power supply or battery backup system. Moreover, it would be pure speculation that the capacitors would be at different stages of crosstalk compensation.

Conclusion

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 621-7140 in the Washington, D.C. area.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3828 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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